

LATE QUATERNARY EROSION AND SEDIMENTATION DYNAMICS WITHIN THE SANDSTONE AREAS: A CASE STUDY FROM BOHEMIAN PARADISE (CZECH REPUBLIC)

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Rapid and pronounced environmental changes along the Last Glacial Termination (LGT; ~ 15-10 ka BP) caused deep ecosystem conversions and evoked distinct interactions within and between the different components of terrestrial environments. Although most research has demonstrated the effects of the climatic instability on the biological components of the environment, significant insight into the LGT climatic and, consequently, landscape dynamics can also be gained by the study of the associated erosion and sedimentation processes.

Due to their lithological composition, weathering susceptibility and high relief dynamic, sandstone areas are sensitive to climatically involved landslides and rockfalls; consequently they represent suitable regions where the relationships between climate and erosion-sedimentation processes can be studied. “Rock cities” of Bohemian Paradise in Northern Bohemia (Czech Republic) is one of the most detailed studied sandstone area at the world, offering diverse sedimentary archives and conserving various types of records of the Late Glacial and Holocene environment (Svoboda et al., 2017). From those archives, peat bogs and lake basins both provide the most valuable source of the paleoenvironmental information on the regional and supra-regional scale. Origin of these basins and depression located at the bottom of deep valleys was found as landslide-dammed. According to the radiocarbon dating and palynostratigraphy of the basal lacustrine sediments and peats, massive landslides and rockfalls occurred in this area at the beginning of the Late Glacial (~ 16-15 ky BP), most probably due to increasing precipitation at this period.

In this contribution we present some results of multidisciplinary research from the case site *Pelešanské* paleolake – with surface area of ~ 3 km² the largest lacustrine basin in the Bohemian Paradise. Because of its large watershed, the former lake provides valuable archive of the erosion-sedimentary processes at the regional level. Based on detailed sedimentological and geochemical analyses of the allochthonous component of the lacustrine sediment, accompanied by geophysical, geomorphological as well as paleobotanical investigations, we were able to reconstruct the dynamics of the erosion-sedimentary process during the Late Glacial and Holocene and discuss our observation in the context of climate change and human activities in the region.

REFERENCES

1. Svoboda J., Pokorný P., Horáček I., Sázelová S., Abraham V., Divišová M., Ivanov M., Kozáková R., Novák J., Novák M., Šída P., Perri A. Late Glacial and Holocene sequences in rockshelters and adjacent wetlands of Northern Bohemia, Czech Republic: Correlation of environmental and archaeological records // *Quaternary International*. – 2018. – № 465. – P. 234–250.